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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/763,380 | 03/29/2001 | Ronald Peter W. Kesselmanns | 294-98 PCT/U | 4884 |

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EXAMINER

WHITE, EVERETT NMN

ART UNIT PAPER NUMBER

1623

DATE MAILED: 01/13/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/763,380

Applicant(s)

KESSELMANS ET AL.

Examiner

EVERETT WHITE

Art Unit

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. The amendment filed October 1, 2002 has been received, entered and carefully considered. The amendment affects the instant application accordingly:

- (A) A new abstract has been provided. The abstract is proper.
- (B) Claims 1-18 have been canceled.
- (C) New Claims 19-36 have been added.
- (D) Comments regarding Art Rejection have been provided drawn to
 - (a) 102(b) rejection, which has been withdrawn.
 - (b) 103(a) rejection, rendered moot by new ground of rejection over newly cited WO Patent and EP Patent.

2. Claims 19-36 are pending in the case.

3. The text of those sections of title 35, U. S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

4. Claims 19-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lotzgesell et al (US Patent No. 3,975,206, already of record) in view of Ewing (US Patent No. 3,539,366, already of record) or Wikstrom (WO 97/04167, newly recited).

Applicants claim a process of oxidizing starch comprising treating a root or tuber starch comprising at least 95 wt.% amylopectin based on dry substance of the starch, or a derivative thereof, with hydrogen peroxide in the presence of a catalyst, wherein the catalyst comprises divalent copper ions. Additional limitations to the process claimed include the specific identity of the catalyst, catalytic amounts, enhancement of divalent copper ions, the source of the starch, the amount of hydrogen peroxide and starch characteristics.

The Lotzgesell et al patent discloses a process for oxidizing starch by employing hydrogen peroxide in combination with heavy metal catalysts that may be selected as copper (see column 3, 2nd paragraph). Lotzgesell et al discloses that the process is effective for any base starch, which include root and root-type starches derived from potato and tapioca (see column 3, 3rd paragraph). The 3rd paragraph of column 3 of the

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Lotzgesell et al patent also discloses that the base starch may be chemically modified by the addition of cationic groups and anionic groups as set forth in instant Claim 27. The Lotzgesell et al patent further discloses in Table 1 samples of hydrogen peroxide thinning of starch using salts of irons and copper as catalysts. The table sets forth Samples A to G, which disclose the catalysts as being a combination of iron and copper, which embrace the subject matter of instant Claim 23 wherein the copper ions are enhanced by one or more metals, which include iron. The amount of catalysts indicated in Tables I and II of the Lotzgesell et al patent suggests the amount of catalysts disclosed in instant Claims 21 and 22. The 1% amount of hydrogen peroxide that is disclosed in the tables embraces the amount of hydrogen peroxide set forth in instant Claims 25 and 26. The instant claims differ from the Lotzgesell et al patent by disclosing the use of divalent copper ions. The instant claims also differ from the Lotzgesell et al patent by claiming that the starch comprises 95 wt.% of amylopectin.

The Ewing patent shows that the use of divalent copper ions in processes for oxidizing starches is well known in the art. The Ewing patent discloses that the catalyst may be selected as copper sulfate (see column 2, last line and column 3, first line), which comprises a divalent copper ion and embraces the copper (II) sulfate set forth in instant Claim 20. Also, see column 2, lines 62 and 63 of the Ewing patent wherein the preferred oxidizing agent is hydrogen peroxide, which is indicated in instant Claim 19.

The Wikstrom WO patent, which discloses an amylopectin-type starch that comprises an amylopectin content in excess of 95 wt.%, shows that oxidation of the amylopectin in starch with hydroperoxide is well known in the art. The use of Hydroperoxide in the Wikstrom WO patent as an oxidizing agent embraces the use of hydrogen peroxide in the instant claims.

One of ordinary skill in this art would be motivated to combine the teachings of the Lotzgesell et al, Ewing, and Wikstrom references in a rejection of the claims under 35 U.S.C. 103 since each reference discloses a starch product that can be used in the papermaking industry.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the copper catalyst used in the oxidation of starch in

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the Lotzgesell et al patent with copper sulfate in view of the recognition in the art, as evidenced by the Ewing patent in the first paragraph of column 3, that copper sulfate is effective in increasing the solubilizing action of hydrogen peroxide on the starch. It would also be obvious to substitute the starch used in the oxidation procedure of the Lotzgesell et al patent with starch having an amylopectin content of at least 95 wt.%, as taught in the Wikstrom WO patent, since Wikstrom teaches that the amount of oxidizing agent required to degrade the amylopectin in starch is approximately 50% lower than the amount required to degrade traditional potato starch.

5. Applicant's arguments with respect to Claims 19-27 have been considered but are moot in view of the new ground(s) of rejection.

6. Claims 28, 29 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wikstrom (WO 97/04167, newly recited).

Applicants claimed oxidized starch products in the form of product-by-process claims. The claims disclose oxidized starch obtainable by a process comprising treating a root or tuber starch comprising at least 95 wt.% of amylopectin based on dry substance of the starch, or a derivative thereof, with hydrogen peroxide in the presence of a catalyst, wherein the catalyst comprises divalent copper ions. The products claimed by Applicants also include a binder in paper coatings, warp yarn sizing, a coating of glass fibers, and an abrasive paper additive, all comprising the oxidized starch comprising an amylopectin content of at least 95 wt.%. The Office generally considers product-by-process claims as product claims.

The Wikstrom WO patent discloses an oxidized amylopectin starch that comprises an amylopectin content in excess of 95%, preferable in excess of 98% (see page 2, lines 13-15). The Wikstrom WO patent further discloses the amylopectin-type starch as being used to produce a finishing agent, which further allows the manufacturing of surface-sizing and coating products (see page 2, lines 29-33). The surface-sizing and coating product of the Wikstrom WO patent embraces the coating, binding and sizing products set forth in instant Claims 28, 29 and 31-33.

The instant claims (see Claims 28, 29 and 31-33) also differ from the Wikstrom WO patent by claiming process steps. However, process limitations cannot impart patentability to a product that is not patentably distinguished over the prior art. *In re Thorpe et al.* (CAFC 1985), *supra*; *In re Dike* (CCPA 1968) 394 F2d 584, 157 USPQ 581; *Tri-Wall Containers, Inc. v. United States et al.* (Ct Cls 1969) 408 F2d 748, 161 USPQ 116; *In re Brown et al.* (CCPA 1972) 450 F2d 531, 173 USPQ 685; *Ex parte Edwards et al.* (BPAI 1986) 231 USPQ 981.

Applicants are also reminded that a difference in intended use cannot render a claimed composition novel. Note *In re Tuominen*, 213 USPQ 89 (CCPA, 1982); *In re Pearson*, 494 F2d 1399; 181 USPQ 641 (CCPA, 1974); and *In re Hack* 114 USPQ 161.

While Applicants claims are directed to a product limited by the process employed in its production there is no reason found for concluding that the product claimed could be distinguished from the product of the Wikstrom WO patent merely because the claimed product was produced under the specific conditions recited, which conditions fall within the purview of the disclosure of the Wikstrom WO patent. Accordingly, it would have been obvious to one of ordinary skill in the art at the time of applicant(s) invention to employ the amylopectin-potato starch having an amylopectin content of at least 95% of the Wikstrom WO patent in view of their closely related structures and the resulting expectation of similar finishing properties.

7. Applicant's arguments with respect to Claims 28, 29 and 31-33 have been considered but are moot in view of the new ground(s) of rejection.

8. Claims 30 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huizenga EP patent (EP 0799837, newly recited).

Applicants claimed oxidized starch products in the form of product-by-process claims. The products claimed by Applicants include an adhesive and food additive, all comprising the oxidized starch comprising an amylopectin content of at least 95 wt.%. The Office generally considers product-by-process claims as product claims.

The Huizenga EP patent discloses compositions that comprise an amylopectin-potato starch that may be used in different products that include food products and

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adhesives (see page 4, lines 21 and 22), which embraces the adhesive of instant Claims 30 and 35 and the food additive of instant Claim 34. See page 3, lines 1 and 2 of the Huizenga EP patent wherein the amylopectin-potato starch is disclosed as having an amylopectin content of at least 95 wt.%, based on the dry substance. The amylopectin-potato starch of the Huizenga EP patent is disclosed as being effective as a dispersing agent with emulsifying agents, which embraces the emulsifying agent claimed in instant Claim 36. The instant claims differ from the Huizenga EP patent by claiming process steps.

However, process limitations cannot impart patentability to a product that is not patentably distinguished over the prior art. *In re Thorpe et al.* (CAFC 1985), *supra*; *In re Dike* (CCPA 1968) 394 F2d 584, 157 USPQ 581; *Tri-Wall Containers, Inc. v. United States et al.* (Ct Cls 1969) 408 F2d 748, 161 USPQ 116; *In re Brown et al.* (CCPA 1972) 450 F2d 531, 173 USPQ 685; *Ex parte Edwards et al.* (BPAI 1986) 231 USPQ 981.

Applicants are also reminded that a difference in intended use cannot render a claimed composition novel. Note *In re Tuominen*, 213 USPQ 89 (CCPA, 1982); *In re Pearson*, 494 F2d 1399; 181 USPQ 641 (CCPA, 1974); and *In re Hack* 114 USPQ 161.

While Applicants claims are directed to a product limited by the process employed in its production there is no reason found for concluding that the product claimed could be distinguished from the product of the Huizenga EP patent merely because the claimed product was produced under the specific conditions recited, which conditions fall within the purview of the disclosure of the Huizenga EP patent. Accordingly, it would have been obvious to one of ordinary skill in the art at the time of applicant(s) invention to employ the amylopectin-potato starch having an amylopectin content of at least 95% of the Huizenga EP patent in view of their closely related structures and the resulting expectation of similar dispersive properties.

9. Applicant's arguments with respect to Claims 30 and 34-36 have been considered but are moot in view of the new ground(s) of rejection.

Declaration Under 37 C.F.R. §1.132

10. The executed Declaration under 37 C.F.R. §1.132 by Ron Kesselmans, Ph.D., filed October 11, 2002 is noted. The declaration indicates that the root or tuber starch

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having 95 wt.% of amylopectin was not known at the time the Lotzgesell et al and Ewing patents were published/filed. This argument is not persuasive since these references are now being used in combination with another reference that specifically recites potato starch having an amylopectin content in excess of 95 wt. %.

The declaration also indicates that the oxidation process of the instant claims has a high reaction rate when a root or tuber starch comprising at least 95 wt. % of amylopectin based on the dry substance of the starch is used. This argument is not persuasive since a newly cited reference, Wikstrom (WO 97,04167), suggest oxidation of potato starch comprising an amylopectin content in excess of 95 wt.%. It is further noted that the feature "a high reaction rate" upon which the declaration relies is not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Accordingly, the declaration does not overcome the art rejections. The rejection of the claims is maintained for the reasons of record.

Summary

11. All the pending claims are rejected.

Examiner's Telephone Number, Fax Number, and Other Information

12. For 24 hour access to patent application information 7 days per week, or for filing applications, please visit our website at www.uspto.gov and click on the button "Patent Electronic Business Center" for more information.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Everett White whose telephone number is (703) 308-4621. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson, can be reached on (703) 308-4624. The fax phone number for this Group is (703) 308-4556.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1235.

E. White

E. White

James O. Wilson

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Supervisory Primary Examiner
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